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## **Abstract**

Optical fiber having a multimode core (10) comprising: - a first zone (11), which is homogeneous, made of a first material, which has a first refractive index; - a second zone (12) made of at least one second material, which has a second refractive index, which is less than the first index, that second zone (12) being peripherally arranged with respect to the first zone (11), said first and second zones being configured so that the interface between those zones defines, in a transverse plane, a contour which has a star shape such that the multimode transmission characteristics of the fiber are equivalent to those of a graded-index fiber. Application in dual-core amplifying fibers or lasers or in transmission fibers for local networks.